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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/898,431	07/02/2001	Yuri Granik	MEGC117332	1914
26389	7590	08/02/2005	EXAMINER	
CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC 1420 FIFTH AVENUE SUITE 2800 SEATTLE, WA 98101-2347			STEVENS, THOMAS H	
			ART UNIT	PAPER NUMBER
			2123	

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/898,431

Applicant(s)

GRANIK ET AL.

Examiner

Thomas H. Stevens

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-25 were examined.

Response to Applicants' Arguments (1st Office Action)

102^e(b)

2. Applicants are thanked for addressing this issue. However, the prior art does suggest etch effects (error do to etch distortions) which the reason for the simulation to meet specified targets (column 6, lines 1018) with mask compensation (column 1, lines 46-50). Applicants state the prior art doesn't suggest nor teach the calculation of the etch effects which the office claims inherency to the level of skill and detail of this art. Rejection stands.

Section II: Final Rejection (2nd Office Action)

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the

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United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-25** are rejected under 35 U.S.C. 102(e) as being anticipated by Pierrat et al (U.S. Patent Number 6,584,609), herein referred to as **Pierrat**.

5. As to **Claims 1, 2, 5, 8, 9, 12, 15, 20 and 23**, **Pierrat** discloses: A method of compensating mask/reticle (target layer) data for lithographic process distortions, comprising the acts of: reading a first set of mask/reticle data that defines at least one feature to be created lithographically (Figure 7, element 720 and column 6, lines 47-51); performing a simulation of the etch effects (error due to etch distortions) that would occur if a wafer is created using a mask/reticle corresponding to the first set of mask/reticle (target layer) data (Figure 7, element 730, column 6, lines 53-55, column 5, lines 21-32); using the results of the etch simulation (error due to etch distortion) to create a second set of mask/reticle data that defines at least one new or modified feature to be created lithographically (Figure 7, element 730, column 6, lines 53-58, column 5, lines 21-32) wherein etch biases are calculated for each manufacturing process and applied in an OPC loop with the manufacturing OPC model (column 5, lines 21-32, Figure 7, elements 730, 740, 750); and performing optical process correction (OPC) using the second set of mask/reticle data as an input to create a third set of mask/reticle data that, when used in a lithographic process, will produce a set of objects on a wafer that substantially matches the new target layer (Figure 7, flow of elements 750, 730, 740, 770, column 6, lines 60-column 7, line 4); exporting the third set of

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mask/reticle data to a mask/reticle writer to manufacture a corresponding mask/reticle and using the mask/reticle to create the device on the wafer (Figure 7, element 770).

7. As to **Claims 3, 4, 6, 7, 10, 11, 13, 14, 18, 19, 21, 22, 24 and 25, Pierrat** teaches: in which the step of performing a simulation includes accessing a set of predetermined rules for the etch process (column 5, lines 28-40, column 13, lines 47-53). The model is stored in the storage area of the computer system running the simulation (Figure 12, elements 1220, 1225, 1240). Since models of different manufacturing processes are made and each model includes etching effects due to wet or dry effects, it is known that this data will be stored in memory. Therefore, when the simulation is run, the memory, or "table" is accessed to extract these values for etch effect.

8. As to **Claim 16, Pierrat** teaches: the method of claim 15, wherein the optical process correction algorithm corrects the third set of data for optical and resists distortions (Figure 7, loop of elements 750, 730 and 740 and description, column 5, lines 29-33).

9. As to **Claim 17, Pierrat** teaches: In the method of claim 15, wherein the optical process correction algorithm simulates optical process distortions in a lithographic process (Figure 7, loop of elements 750, 730 and 740 and description, column 5, lines 29-33); and adjusting the third set of data that defines a pattern of objects to be created lithographically until a simulation of a pattern created lithographically from the third set of data substantially matches the new target layer (Figure 7, element 740 and description).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

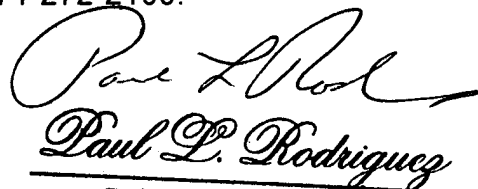
Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (8:00 am- 4:30 pm) or contact Supervisor Mr. Leo Picard at (571) 272-3749. Central Fax number is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

July 26, 2005

THS

 7/27/05
Paul L. Rodriguez
Primary Examiner
Art Unit 2125